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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,125	02/05/2004	Sharon A. Elsworth	RTN-194AUS	3259

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RAYTHEON COMPANY  
C/O DALY, CROWLEY, MOFFORD & DURKEE, LLP  
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SUITE 301A  
CANTON, MA 02021

EXAMINER
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MATZEK, MATTHEW D

ART UNIT	PAPER NUMBER
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1771

MAIL DATE	DELIVERY MODE
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06/29/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/773,125	Applicant(s) ELSWORTH ET AL.	
	Examiner Matthew D. Matzek	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 April 2007.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-7, 19-22, 24, 26, 28 and 30-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7, 19-22, 24, 26, 28 and 30-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

1. The amendment dated 4/19/2007 has been fully considered and entered into the Record. Claims 23 and 25 have been incorporated into independent claim 1 and claims 27 and 29 have been incorporated into independent claim 19. The 112 rejection of claims 23-30 has been withdrawn as there is sufficient support for the limitation of high strength and high modulus fibers. The 112 rejection of claim 3 has been withdrawn due to amendment. The anticipatory rejection of claims in view of Barber, Jr. has been withdrawn because the reference fails to teach the use of high strength and high modulus aramid and or aromatic polyester fibers.
2. New claims 30-36 have been added and contain no new matter. Claims 1-3, 5-7, 19-22, 24, 26, 28 and 30-36 are currently pending.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 31-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejected claims are improper hybrid claims because the preamble describes a subcombination, while the remainder of the claim is directed to a combination (i.e. the claims' preambles are directed to a fabric product, but the claims are actually directed to a radome or a thermally welded seam). Furthermore, the claims are indefinite because the claims recite a fabric product as a part of a radome or welded seam without setting forth what spatial relationship said fabric has within said radome or seam and no structure has been set forth to describe said radome

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or seam. New claims 31-36 also set forth an improper shift of the invention away from a fabric article to a radome or welded seam apparatus.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-3, 5-7, 24 and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barber, Jr. (US 2004/0101680 A1) in view of Schwartz et al. (US 4,826,508).

a. Barber, Jr. teaches an abrasive article comprising a fiber web of polyester, polyamide or polyaramid fibers [0081] that contains composition comprising a blocked polyisocyanate (polyurethane pre-polymer), a co-reactant curative [0006-7], a cross-linked copolymer and optionally a diluent [0058]. The composition comprising the pre-polymer and curative may be applied to the fiber web by a variety of processes that would lead the composition to impregnate and coat the fiber web [0065]. The curative stoichiometry of the pre-polymer/curative composition may range from 0.75 to 1.25 or 75 to 125 percent [0050]. Claims 3 and 7 are rejected as the applied composition may comprise from 5-90 weight percent pre-polymer and from 0.001 to 40 weight percent cross-linked copolymer. Therefore, the remaining weight percentage of the applied composition may be the curative component. This allows for the curative to range from ~0 to ~95 weight percent and anticipates the instantly claimed compositions. Barber, Jr. fails to disclose the use of high strength and high modulus aramid and or aromatic polyester fibers.

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- b. Schwartz et al. disclose an abrasive member comprising resin, abrasive particles, and fabric, which is laminated onto a tough backing material (abstract). Preferably the backing fabric comprises poly-aramid fabrics (col. 3, lines 3-17) for strength. Poly-aramid polyparaphenylene terephthalamide fibers are used in the backing material to provide the article with strength (col. 3, lines 3-42).
  - c. Since Barber, Jr. and Schwartz et al. are from the same field of endeavor (i.e. abrasive articles), the purpose disclosed by Schwartz et al. would have been recognized in the pertinent art of Barber, Jr.
  - d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Barber, Jr. with the poly-aramid polyparaphenylene terephthalamide fibers with the motivation of imparting the abrasive invention of Barber, Jr. with improved strength as disclosed by Schwartz et al.
6. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barber, Jr. (US 2004/0101680 A1) in view of Schwartz et al. (US 4,826,508) as applied to claim 1 above, and further in view of Sandor et al. (US 5,976,998). The disclosures of Barber, Jr. and Schwartz et al. fail to teach the use of polyester-polyarylate fibers.

The combined disclosures of Barber, Jr. and Schwartz et al. disclose the claimed invention except that it uses poly-aramid polyparaphenylene terephthalamide (KEVLAR®) instead of polyester-polyarylate (VECTRA ®), Sandor et al. shows that polyester-polyarylate is an equivalent structure known in the art. Therefore, because these two materials were art-recognized equivalents at the time the invention was made,

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one of ordinary skill in the art would have found it obvious to substitute poly-aramid polyparaphenylene terephthalamide for polyester-polyarylate.

7. Claims 19-22, 24 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barber, Jr. (US 2004/0101680 A1) in view of Schwartz et al. (US 4,826,508) as applied to claim 1 above, and further in view of Fitzner et al. (US 4,227,350). The disclosures of Barber, Jr. and Schwartz et al. are silent as to the use of a second layer of resin-coated fabric.

a. Fitzner et al. teach a low-density abrasive product formed of a uniform cross-section lofty web comprised of an undulated entangled bonded filaments of high yield strength material impregnated with binder (Abstract). Figure 6, shows an embodiment of the abrasive product comprising a stack of several layers of the entangled web prior to the compression of said stack and the final curing of the article (col. 3, lines 12-22). The thermoplastic material has a high yield strength of at least 3000 psi to provide the necessary degree of toughness for the prolonged use as an abrasive article (col. 4, lines 50-55).

b. Since Barber, JR. and Fitzner et al. are from the same field of endeavor (i.e. abrasive articles), the purpose disclosed by Fitzner et al. would have been recognized in the pertinent art of Barber, JR.

c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Barber, JR. with additional layers of the abrasive article with the motivation of making the abrasive article available for prolonged usage as disclosed by Fitzner et al. (col. 4, lines 62-68).

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8. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barber, Jr. (US 2004/0101680 A1) in view of Schwartz et al. (US 4,826,508) and Fitzer (US 4,227,350) as applied to claim 1 above, and further in view of Sandor et al. (US 5,976,998). The disclosures of Barber, Jr., Schwartz et al., Fitzer fail to teach the use of polyester-polyarylate fibers.

The combined disclosures of Barber, Jr., Schwartz et al. and Fitzer disclose the claimed invention except that it uses poly-aramid polyparaphenylene terephthalamide (KEVLAR®) instead of polyester-polyarylate (VECTRA ®), Sandor et al. shows that polyester-polyarylate is an equivalent structure known in the art. Therefore, because these two materials were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute poly-aramid polyparaphenylene terephthalamide for polyester-polyarylate.

#### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1-3, 5-7, 19-22, 24, 26, 28 and 30-36 have been considered but are moot in view of the new ground(s) of rejection.


#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Matzek whose telephone number is 571.272.2423. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571.272.1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

mdm *mdm*

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